

# Use of Social Discount Rates

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Presentation to the California Energy Commission  
Docket 08-IEP-1 (2008 IEPR Update)

# Witness Qualifications

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- ❑ 30 years specific experience with economic analysis of energy and utility issues
  - ❑ 24 years at JBS
  - ❑ Current clientele is largely energy consumers, government agencies, and environmental groups
  - ❑ Testified before about 40 regulatory commissions and courts including CEC on many occasions.
  - ❑ Worked at CEC in 1970s-1980s
  - ❑ Prepared teaching materials on Benefit-Cost Analysis at Kennedy School of Government at Harvard before coming to California.
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# Prior Presentation on This Topic

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- Testimony for TURN on “Discount Rates in Economic Assessment of Transmission Projects” in CPUC A. 05-04-014 (Devers-Palo Verde 2)
    - We have copies available today
    - Incorporate into the record with this presentation, as it provides more detail
    - Arguments adopted by CPUC
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# Argument for Social Discount Rates

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- ❑ The private sector does not give adequate weight to the future relative to the present.
  - ❑ Argument is particularly important for irreversible impacts.
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# Argument Against Social Discount Rates

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- ❑ Social discount rate is less than opportunity cost of capital.
  - ❑ Means that projects picked using social discount rate will “crowd out” projects with higher benefits.
  - ❑ Society will be worse off.
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# Social Discount Rates and the Utility Sector

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- ❑ The social discount rate is less than the real cost of raising debt and equity capital to build a utility or private sector project like a powerplant or a transmission line.
  - ❑ The social discount rate is less than the rate of return that users of the utility system must pay for utility capital.
  - ❑ Ratepayers are likely to prefer lower rates to building a project that barely passes a cost-effectiveness test with a social discount rate.
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# Irreversible Effects

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- ❑ Social discount rate may be theoretically better for a case where a decision is irreversible, locking in consequences for many years.
    - Building and Appliance Standards
    - Lost Opportunities in conservation if standards don't look at the future.
  - ❑ But most utility projects don't fit this definition.
    - Projects can be built now, deferred, or not built at all.
    - Only irreversible effects of a transmission project involve the environmental degradation it produces.
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# Discounting Different Elements of a Project or Plan with Different Discount Rates

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- Quickly Becomes Subjective
    - If gas gets a social discount rate, do we adjust the capital cost of a new nuclear plant if comparing gas vs. nuclear to take risk into account? If so, how?
    - We can't conclude that nuclear is the answer in a nuclear vs. gas scenario because other technologies (e.g., renewables) may have different risk profiles
  - Run scenarios to cover relevant risks rather than changing discount rates for individual elements.
  - Assume that policy makers are smart enough.
    - Can pick a plan or project that may be more expensive than the least cost if it has valuable risk-reduction or environmental attributes.
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# “Strategic” Benefits

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- Be transparent! Don’t play with the discount rate, value the benefits directly!
  - When one values “strategic” benefits directly, some of the benefits are:
    - Relatively easy to calculate directly (e.g., air emissions values)
    - Already internalized (legislation says to buy renewables and build transmission for renewables so you don’t need a discount rate to do it);
    - Small when considered as incremental to existing programs (insurance values of transmission);
    - Extremely uncertain over long periods of time (e.g., measuring gas prices over 40 years when the entire electric generation technology could change)
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# If using a social discount rate

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- ❑ Do a sensitivity analysis using a utility cost of capital so the public can see the impact of the choice of discount rate.
  - ❑ Require benefits to exceed costs by a significant amount – gives more weight to the future without as much crowding out of private sector investments or use of utility capital earning less than its rate of return.
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# Unintended(?) Consequence of Social Discount Rate

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- ❑ Social discount rate for gas, if used for energy efficiency under current CPUC energy efficiency incentive framework could give utilities greater incentives for the same amount of conservation.
  - ❑ Ratepayers pay more per unit of conservation for no reason.
  - ❑ Money for nothing.
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# Conclusion

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- ❑ Do not use social discount rates for analysis of generation and transmission projects or valuing natural gas.
    - Ratepayers have to pay 9% (6-7% real) return (13% return including income and property taxes), so using a 3% real discount rate can only raise rates.
    - Analyze fuel, environmental and strategic costs and benefits transparently, not by changing discount rate.
    - CPUC agrees with TURN that transmission should be evaluated using utility discount rates (in Devers-Palo Verde 2 decision in A.05-04-015)
    - Federal government uses a private sector discount rate as base case (Office of Management and Budget Circular A-94)
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